

*Kasuistik aus dem Arbeitskreis Klinische Toxikologie***Case report: Corlumine intoxications?****Katharina Rentsch***Institute for Clinical Chemistry, University Hospital, Rämistr. 100, CH-8091 Zürich, Switzerland*

A 25 year-old female patient with a psychiatric anamnesis has been hospitalized for a leg injury at the end of March 2002 in the university hospital Zurich. Two days after her admission she was found in her bed with apnea after a short walk to the toilet on the corridor. She was immediately intubated and transferred to the intensive care unit. Because the reason for this incident could not be explained by her clinical situation, blood and urine was sent to the toxicology laboratory for a general unknown screening. With REMEDI™ and/or GC-MS the following substances have been identified in the urine: atracurium, clobazam and metabolites, carbamazepine and metabolites, midazolam, promazine metabolite, citalopram and metabolites and caffeine. There was a huge peak in the GC-MS chromatogram which was matched by the NIST library (1998) as corlumine. Corlumine is an alkaloid of the plant *Corydalis* sp. (structure see Fig. 1). Other alkaloids which are present in this plant have not been identified in the urine of this patient and there were no data published on the toxicology of this compound.

Two weeks later, a 1.5 year old child was admitted to the intensive care unit of the near-by children's hospital, who was unconscious and apnoic and had severe haemorrhagias on the head. Due to the children welfare program and because the administration of drugs to the child by the parents could not be excluded, a general unknown screening was ordered after intubation of the child. With REMEDI™ and/or GC-MS atracurium, atropine and pethidine were identified and with GC-MS corlumine was matched again. Because it was rather unlikely to have a second corlumine intoxication within 2 weeks and because atracurium has been found in both patients, the structural formulas of these compounds were compared (Figure 1).

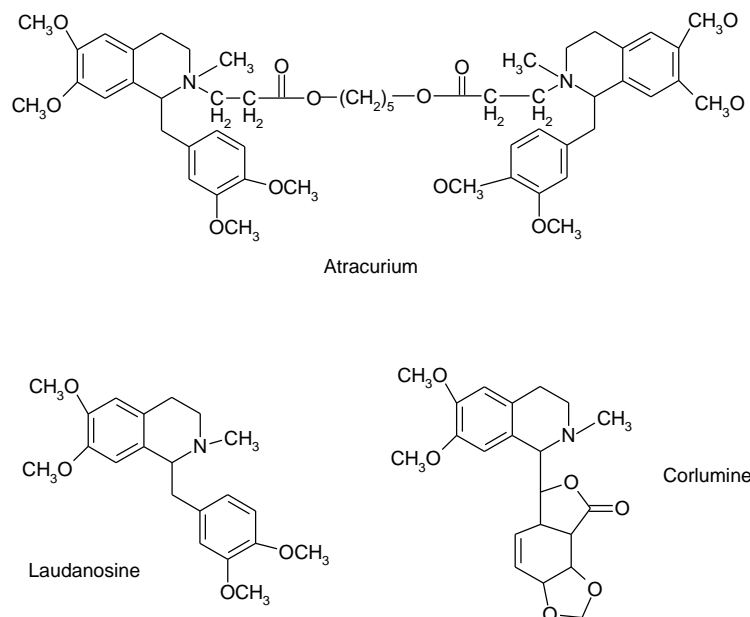


Figure 1. Structure of Atracurium, Laudanosine and Corlumine

Atracurium is very rapidly metabolized by Hoffmann's elimination to laudanosine and this metabolite has structural similarities with corlumine. In the newest edition of the Pflieger-Maurer-Weber library the mass spectrum of laudanosine could be found and it is almost identical with the mass spectrum of corlumine. The spectrum measured in the first case is shown in Fig. 2. The Pflieger-Maurer-Weber library is the only commercial library which contains the mass spectrum of laudanosine.

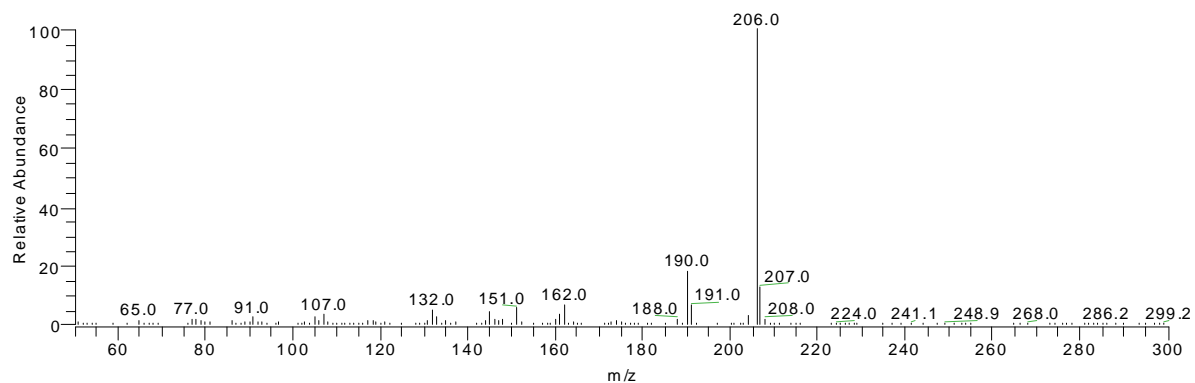


Fig. 2 Mass spectrum of laudanosine in the first patients urine

Therefore, one has to be very careful with the interpretation of the matches of spectra with other commercial libraries when urine of recently intubated patients is analysed if the muscles have been relaxed with atracurium.